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2004 White House Closing the Circle Award Nominations

The Office of the Federal Environmental Executive (OFEE) has announced the beginning of the nomination process for the 2004 White House Closing the Circle Awards. Full details are available at www.ofee.gov. The categories have changed for 2004.

AWARD CATEGORIES FOR 2004

* Waste/Pollution Prevention
* Recycling
* Green Purchasing
* Environmental Management Systems
* Sustainable Design/Green Buildings

I strongly encourage you to submit element nominations for this prestigious award. The Coast Guard Yard won for their environmental management system implementation activities last year.

DHS is developing its environmental award process, which will mirror the Closing the Circle Awards. All nominations (in the required OFEE format) for the Closing the Circle Awards should be submitted to the Office of Safety and Environment (OSE) to be considered for the DHS Environmental Award prior to being submitted to OFEE.

In This Issue

Energy projects meeting the sustainable design/green building criteria can be submitted for the Closing the Circle award. DOE will conduct the normal Energy Award process in the spring as usual.

The deadline for submitting your nominations to OSE is 9 January 2004. Please contact me if you have any questions. Thanks and good luck.

Bill McGovern
Department of Homeland Security
202 692-4225 or 772-9778
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(Award Information Continued on page 2)

Environmental Times Has Gone Paperless!

We are proud to announce that Issue 03-03 of the *Environmental Times* was the first issue available only via electronic distribution on G-SEC's website, www.uscg.mil/systems/gse/gsec-3H.htm. Hard copies of the newsletter were not mailed. This has significant environmental, as well as economic benefits, to the Coast Guard. Please contact Martin Nguyen at 202-267-2342 or by email at mnguyen@comdt.uscg.mil if you wish to be added to the Environmental Times distribution list.

Electronic distribution is an important step not only for the Coast Guard, but DHS as a whole, as we strive to move towards a paperless, environmentally sound future. Remember the three "Rs"...**Reduce, Reuse, Recycle**!

ALCOAST: Award Nomination Instructions

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SUBJ: CALL FOR NOMINATIONS FOR ENVIRONMENTAL AWARDS

1. ON 14 NOVEMBER, 2003, THE DEPARTMENT OF HOMELAND SECURITY (DHS) ANNOUNCED ITS ENVIRONMENTAL AWARD PROGRAM. DETAILS ON THIS AWARD PROCESS ARE BEING DEVELOPED, AND WILL BE AVAILABLE SOON ON THEIR WEBPAGE. ON 10 NOVEMBER, 2003, THE WHITE HOUSE OFFICE OF THE FEDERAL ENVIRONMENTAL EXECUTIVE ANNOUNCED ITS CLOSING THE CIRCLE (CTC) AWARD. DETAILS ON THE WHITE HOUSE CTC AWARD ARE POSTED ON THEIR WEBPAGE AT HTTP://OFEE.GOV.

2. BOTH THESE AWARDS RECOGNIZE INDIVIDUALS AND TEAMS WHO DEMONSTRATE LEADERSHIP IN WASTE/POLLUTION PREVENTION, RECYCLING, GREEN PURCHASING, ENVIRONMENTAL MANAGEMENT SYSTEMS, AND SUSTAINABLE DESIGN/GREEN BUILDINGS. CRITERIA FOR THE WHITE HOUSE CLOSING THE CIRCLE AWARD AND THE DHS ENVIRONMENTAL AWARD ARE SIMILAR, AND HIGHLIGHT PARTNERSHIPS IN EDUCATION AND OUTREACH (BOTH INTERNAL AND PUBLIC), INNOVATIVE WASTE AND ENERGY REDUCTION PRACTICES, AND SUSTAINABLE DESIGN PRACTICES FOR BUILDING CONSTRUCTION AND RENOVATION THAT ARE ALSO COST EFFECTIVE.

3. DHS AWARD NOMINATIONS MUST BE SENT ELECTRONICALLY TO KMALMBERG(AT)COMDT.USCG.MIL (G-SEC-3), NLT 2 JAN 2004. G-SEC-3 WILL FORWARD APPROPRIATE NOMINATIONS TO THE OFFICE OF SAFETY AND ENVIRONMENT (OSE) AT DHS. WINNING DHS NOMINATIONS WILL BE AUTOMATICALLY FORWARDED TO THE WHITE HOUSE CTC PROGRAM FOR CONSIDERATION. FOR MORE INFORMATION ON THE DHS AWARD, AND COPIES OF DHS NOMINATION MATERIALS, CONTACT MR. BILL MCGOVERN AT (202) 692-4225, BILL.MCGOVERN(AT)DHS.GOV. WHITE HOUSE CTC AWARD NOMINATIONS MUST BE SUBMITTED ELECTRONICALLY TO KMALMBERG(AT)COMDT.USCG.MIL BY 23 JAN 2004.

4. I ENCOURAGE YOU TO TAKE ADVANTAGE OF THESE OPPORTUNITIES TO PROVIDE RECOGNITION FOR COAST GUARD INDIVIDUALS OR TEAMS WHO WORK TO ADVANCE ENVIRONMENTAL GOALS.

5. INTERNET RELEASE AUTHORIZED.

6. RADM ERROLL BROWN, ASSISTANT COMMANDANT FOR SYSTEMS, SENDS.

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The 2004 White House Closing the Circle Awards

We cordially invite you to participate in the 2004 White House Closing the Circle (CTC) Awards. This program recognizes Federal employees and their facilities for efforts that resulted in significant contributions to or have made a significant impact on the environment. The awards focus on waste prevention, recycling, and green purchasing activities under E.O. 13101, pollution prevention and environmental management under E.O. 13148, and green/sustainable buildings under both executive orders. The complete directions, including information on agencies' internal awards programs, can be found on our website, *www.ofee.gov*, by clicking on the “Closing the Circle Awards Nomination” button on the left side of the home page.

IMPORTANT CHANGES TO NOTE

Now in our tenth year, we continue to seek exemplary success stories that can set the example for other Federal facilities to follow. This year we have made several changes to the awards categories. First, recognizing our belief

that Federal agencies should have one, comprehensive green purchasing program, rather than separate programs for buying recycled content, environmentally preferable, and biobased products, we have combined the affirmative procurement, environmental preferability, and biobased categories into one green purchasing category. We will instruct the judges to give preference to programs that consist of both a buy-recycled component and either an environmentally preferable products component or a biobased products component. However, for this year, successful candidates are not required to have a program containing all three components.

Second, we believe that education and outreach are key tools to successful programs and should be an integral part of successful waste/pollution prevention, recycling, green purchasing, environmental management, or sustainable building efforts. Therefore, rather than continuing to have a separate education and outreach nomination category, we have incorporated education and outreach into the other categories.

Third, continuing our emphasis on facility use of environmental management systems and sustainable design for building construction and renovation, we are continuing the Environmental Management System and Sustainable Design/Green Buildings categories.

Fourth, we are no longer requesting that nominees distinguish between non-hazardous waste and hazardous waste projects. We will accept nominations for programs involving either hazardous or non-hazardous waste and instruct the judges to select the best projects regardless of waste type.

Finally, we will continue to consider nominations from either an individual Federal employee or teams/groups of Federal employees (including teams of Federal and contract employees). Partnerships between Federal facilities or Federal employees and non-Federal entities, such as surrounding local communities or non-profit organizations, will also be considered for award.

AWARD CATEGORIES FOR 2004

* Waste/Pollution Prevention
* Recycling
* Green Purchasing
* Environmental Management Systems
* Sustainable Design/Green Buildings

SHARING OF NOMINATION INFORMATION

Part of OFEE's mission is to share best practices and success stories among Federal agencies and with other organizations. We recently posted waste prevention and recycling best practices on our website, and also share successes and best practices through our newsletter and training sessions.

Finally, it is not our intent to limit your opportunity for award recognition by imposing strict parameters that may hinder program innovation. The objective of the White House Closing the Circle Award Program is to recognize all applicable waste reduction, green/sustainable building, environmental management, and recycling and green purchasing innovations and successes. Be creative and let your imagination run wild! If you have any questions call us at (202) 564-1297. Good Luck!

The Office of the Federal Environmental Executive
202-564-1297
www.ofee.gov

Battery Recycling

Some Facts about Battery Recycling and Mercury Waste

(Information gathered from various websites)

The Rechargeable Battery Recycling Corporation (RBRC) is a non-profit organization dedicated to promoting the recycling of portable rechargeable batteries. Check out their website – it has a lot of information including teaching resources. Their battery lesson plan has a wealth of "fun facts" to choose from. For more information, visit the RBRC website at *http://www.rbrc.org/school/index.html*.

The EPA website (*http://www.epa.gov/epr/products/batteries.html)* provides information on battery reuse and recycling. Depending upon the type of recyclable batteries, you can also access EPA information on each individual component, such as mercury or cadmium.

"Each year, over 2 billion used batteries are disposed into solid waste facilities in the United States. This constitutes 88% of the mercury and 54% of the cadmium deposited into U.S. solid waste landfills. This represents a potential long-term threat to groundwater and drinking water supplies. Battery recycling reduces this long-term threat by keeping batteries out of landfills."
(Source: *http://www.ehso.com/battery.php*)

"When a nickel-cadmium (Ni-Cd) battery is thrown in the garbage, it eventually ends up in a landfill or municipal incinerator. By recycling used Ni-Cd rechargeable batteries, we can work together to help create a cleaner environment for generations to come. The reclaimed nickel is used to make stainless steel products, while the cadmium is reused in new Ni-Cd rechargeable batteries."
(Source: *http://go4green.sask.com/home/home/ni-cd.html*)

"The environmental benefits of battery recycling are plain to see – while keeping potentially hazardous battery substances out of landfills, battery recycling will also help reduce the future mining of valuable metals. Batteries are made from a variety of substances and chemicals. The most common elements present are zinc, iron, carbon, manganese and chlorine. Battery recycling allows for the recovery of zinc, lead and cadmium for use in established markets for these metals. Some of the main uses of these recovered metals may include using zinc for protecting steel in cars and buildings, and lead for car batteries. Zinc and cadmium may also be used to make new batteries."
(Source: *http://www.southwestrda.org.uk/news/release.asp?releaseid=374*)

"The toxic heavy metals, such as cadmium and lead, found in rechargeable Ni-Cd and small sealed lead-acid (SSLA) batteries perform critical functions within the battery. Heavy metals are contained within the battery's casing and pose no real risks while the battery is in use. But they can be of concern when discarded with ordinary municipal solid waste, as most batteries are. Ni-Cd rechargeable batteries were estimated to represent approximately 75 percent of the cadmium found in municipal solid waste in 1995. EPA projected that lead-acid rechargeable batteries, of which SSLAs are a small percentage, would represent approximately 65 percent of the lead found in municipal solid waste in 1995.

At present, approximately 73 percent of municipal solid waste is either landfilled or incinerated. Neither of these methods is ideally suited for batteries that contain heavy metals. In landfills, especially those without liners and controls, heavy metals have the potential to leach slowly into soil, ground water, and surface water. When incinerated, metals such as cadmium and lead can concentrate in the ash produced by combustion and enter the atmosphere through incinerator smokestack emissions. When disposed of, the metals in the incinerator ash can leach into the environment. In the environment, certain types of heavy metals can also concentrate in the tissues of organisms and make their way up the food chain. Several metals, such as cadmium, are known carcinogens. The possible health effects associated with ingestion or inhalation of water, food, or air that has been contaminated with high levels of heavy metals range from headaches and abdominal discomfort to seizures, cancer, comas, and even death. The severity of the health effects are usually dependent on the total concentration of the metals to which one is exposed over time.

Recycling programs for Ni-Cd and SSLA rechargeable batteries can address the potential risks posed by landfilling or incinerating these batteries by diverting them from the waste stream. In the case of battery recycling, metals are recovered from the used batteries, and the remainder of the product is recycled or discarded."
(Source: *http://www.epa.gov/epaoswer/hazwaste/recycle/battery.pdf*)

"Numerous household and commercial products contain mercury, which is a bioaccumulative neurotoxin that persists in the environment once released. Collection systems for these products have been almost entirely developed and maintained by local and state governments, and to some extent by industry. The collection systems currently in place do not provide universal and convenient access for citizens and businesses wishing to recycle mercury containing wastes and are inadequate to handle the volume of products in circulation. These collection systems are limited by a lack of funding, even as the emphasis on mercury has increased due to the awareness of its toxicity and environmental impacts. The need for continued collection and recycling programs will continue unless future products are designed to contain less, or no, mercury."
(Source: *http://www.productstewardshipinstitute.org/pdf/Mercury_Action_Plan_1206.00_Final.pdf*)

Managing Household Batteries

From the Connecticut Department of Environmental Protection, http://www.dep.state.ct.us/wst/recycle/batthaz.htm

Household batteries, commonly known as dry cell batteries, are comprised of an anode, a cathode, and an electrolyte. The anode is the positive terminal, the cathode is the negative terminal, and the electrolyte is the chemical solution through which the electrons flow from anode to cathode, creating an electrical charge. Various metals are used in the cathodes and anodes. The following summary provides general information on the chemistry and disposal options for household batteries.

Nickel Cadmium Batteries. Nickel cadmium batteries consist of a nickel cathode, a cadmium anode, and an alkaline solution for an electrolyte. These batteries are rechargeable and are found in traditional cylindrical battery sizes as well as in a wide variety of battery packs. The battery packs are used in items such as cordless telephones, video cameras, hand-held vacuums, and cordless power tools. The RBRC is an organization of battery manufacturers who have established a collection and recycling program for their nickel cadmium batteries. The program is financed by the RBRC. The battery manufacturers buy back the cadmium after it is processed to use in the next generation of batteries. These nickel cadmium batteries can be recycled at a number of participating retail collection points. For information on where to recycle nickel cadmium batteries in your area, call 1-800-8-BATTERY or log on to the RBRC website at *http://www.rbrc.com/*.

Alkaline and Zinc Carbon Batteries. Alkaline and zinc carbon batteries typically contain a manganese dioxide cathode and a zinc anode. The electrolyte in an alkaline battery is usually potassium hydroxide or sodium hydroxide, while in a zinc carbon battery the electrolyte is ammonium chloride or zinc chloride. They represent about 70% of the battery market. In the past, mercury was added to prevent corrosion and the creation of hydrogen gas. Recent laws have restricted the levels of mercury allowed in alkaline and zinc-carbon batteries. Today, alkaline batteries on the market are required to have zero-added mercury. Despite these efforts, there are still a significant number of older batteries which contain mercury. Those batteries which are determined to be manufactured before 1992 should be managed through a household hazardous waste collection. Those batteries manufactured after 1992 can be disposed in the regular trash if there is no local recycling option available. INMETCO, a metals reclamation facility in Pennsylvania, recycles alkaline and zinc carbon batteries and can be reached at (724) 758-2800.

Sealed Lead-Acid Batteries. Sealed lead-acid batteries are rechargeable and are used in camcorders, cordless phones, and power tools. They contain a lead dioxide or lead sulfate cathode, a lead anode, and a sulfuric acid electrolyte. The RBRC accepts small sealed lead-acid batteries weighing less than 2 lbs/1Kg for recycling in their program.

Silver Oxide Batteries. Silver oxide batteries are button cells commonly used for watches, calculators, and hearing aids. They contain a zinc anode, silver oxide cathode, and an alkaline solution for the electrolyte. They also contain mercury to prevent the formation of gas. These batteries are recyclable because of the value of the silver. Most jewelry stores will recycle the silver oxide battery when you bring your watch in to have the battery replaced. Otherwise, it can be disposed at a household hazardous waste collection. The difficulty in collecting these batteries is that they are quite similar in appearance to other button cell batteries.

Lithium Batteries. Lithium batteries are button cells used primarily for cameras and contain a lithium anode and various types of cathodes and electrolytes. Lithium batteries are currently not being recycled. Lithium is a highly reactive metal and, when collected with other button cells, may present a hazard if not fully discharged. A fully discharged lithium battery converts the lithium into various lithium compounds that are inert and non-toxic. Unlike other button cells, lithium batteries do not contain mercury. If a lithium button cell is determined to be fully spent, it is safe to dispose in the regular trash. The newer lithium ion batteries used in certain cell phones and camcorders can be recycled through the RBRC program.

Zinc-Air Batteries. Zinc-air batteries are button cells used primarily for hearing aids. They have a zinc anode, oxygen from the atmospheric air which acts as the cathode, and an alkaline solution as the electrolyte. They contain about one percent mercury by weight which serves as a gas suppressant. There is currently limited recycling of zinc-air batteries available (INMETCO). The best management option is to bring to a household hazardous waste collection.

For more information, contact Tom Metzner at DEP (860) 424-3242.

Putting a Charge into Recycling

By Marty Whitford

Recycling isn't exactly rocket science, but sometimes it can be pretty confusing to the typical consumer. "We used to just recycle nickel-cadmium batteries, but the problem was that the average Joe consumer is lucky to differentiate between a rechargeable and nonrechargeable battery," said Charlie Monahan, a director of the RBRC. "When you get into all the different chemistries of batteries, many consumers get that glazed-over look in their eyes."

RBRC recently expanded its recycling program to all rechargeable types, including nickel metal hydride, lithium ion, and small-sealed lead acid batteries. "We've simplified and expanded our battery program and are changing our tagline to, 'If it's rechargeable, it's recyclable,'" said Norm England, RBRC president and CEO. "We as a group collected and recycled 2.5 million pounds of nickel-cadmium batteries last year and are confident that this simplified program will boost our volume by 10 to 20 percent this year alone." Founded by more than 300 manufacturers and marketers of portable rechargeable batteries and products that use them, the RBRC collects batteries at 30,000 retail outlets in the United States and Canada. Participating retailers include Radio Shack, Ace Hardware, Target, Wal-Mart, and Circuit City. Consumers can pinpoint the closest drop off point by calling 1-800-8-BATTERY or logging on to the group's website at http://www.rbrc.com/.

The program expansion should clear up most issues clouding what battery types are recyclable and bolster the group's effort to recover valuable nickel-cadmium cells that typically are landfilled as hazardous waste, said Monahan, director of environmental regulation and compliance for Secaucus, N.J.-based Panasonic Industrial Co. Panasonic uses nickel-cadmium batteries to charge many of its cordless power tools, cordless phones, and other household appliances, including shavers.

The RBRC supplies stores with prepaid mailing boxes addressed to the organization's recycling partner, the International Metals Reclamation Co. (INMETCO) based in Ellwood City, Pa. INMETCO extracts nickel-cadmium from the batteries and combines it with iron, chromium, and other materials to produce stainless steel. The batteries' plastic components are used as a source of energy in the recycling process.

"These batteries contain cadmium, a heavy metal that can be harmful to public health and the environment if not disposed of properly," said Carol Browner, administrator of the U.S. Environmental Protection Agency. "I congratulate the retail chains participating in this recycling program and hope others will follow their example." The nickel-cadmium battery market exploded in the late 1980s because of the popularity of cordless power tools and phones and various household and business appliances charged by the cells. In the early 1990s, most cellular phones and laptops were powered by nickel-cadmium batteries, but most of these products since have migrated toward lithium ion and nickel metal hydride batteries, Panasonic's Monahan said.

The often higher costs and lower energy output of less hazardous battery types have prevented many manufacturers of cordless power tools, phones and other household products from following the lead of cell phone and laptop makers, said Tim Pugh, director of global commodities for Black & Decker Corp. About 1.3 billion nickel-cadmium battery cells were sold worldwide last year, and Black & Decker products used 182 million of the cells, with 70 percent of the products sold in the United States. The U.S. market for nickel-cadmium batteries is more than 500 million cells annually and is growing, Pugh said.

"We do have one line of consumer products powered by nickel metal hydride cells, and we don't sell nickel-cadmium-powered products in Sweden because the country has a tax for the use of such cells that amounts to $30 a product on some of our cordless lines," Pugh said. "We use nickel-cadmium batteries in most of our cordless products because alternative cells can cost 40 to 50 percent more and typically don't deliver the energy output that most consumers and professionals are looking for," he said. "Nickel-cadmium batteries have been around for 50 to 60 years, and they will continue to be popular because of their cost and energy efficiencies."

RBRC officials and manufacturers and users of nickel-cadmium batteries say there is room to grow collections 100-fold or more. "Aluminum can recycling has been around for three or four decades, but just half of people recycle such products today," Monahan said. "Just like almost everyone knows aluminum cans can be recycled, we need to educate the public that all rechargeable batteries now are recyclable. Like all recycling initiatives, it will take time to build up this program. The RBRC's expanded recycling program is a big step in the right direction and should simplify matters for consumers and expand collections significantly for all cell types for many years to come."

A Charged-Up Market

Summary of article by Chris Sova and Harve Mueller, Battery Power Products & Technology Magazine

Tremendous opportunities exist for advanced battery developments and safer and more cost-effective recycling. Government agencies have worked with businesses to ensure that new regulations are met and that technologies that will help to ensure the protection of our environment and health are developed. Battery Solutions Inc., Brighton, Mich., is among the companies playing an active role in the battery recycling process. Companies that recycle batteries use a variety of techniques and processes to maximize resource recovery safely and profitably.

Lead Acid Battery Recycling. In high-volume, approved operations, the battery is broken apart in a hammer mill, a machine that hammers the battery into pieces. The broken battery pieces go into a vat, where the lead and heavy materials fall to the bottom and the plastic floats. At this point, the polypropylene pieces are scooped away, and the liquids are drawn off, leaving the lead and heavy metals. Each of the materials goes into a different "stream:"

- Plastic. Molten plastic is put through an extruder that produces small plastic pellets of a uniform size. The pellets are sold to a battery manufacturer of battery cases, and the process begins again.
- Lead. The lead grids, lead oxide and other lead parts are cleaned and then melted together at smelting furnaces. The molten lead is poured into ingot molds. When the ingots are cool, they are removed from the molds and sent to battery manufacturers where they are re-melted and used in the production of new lead plates and other parts for new batteries.
- Sulfuric Acid. Old battery acid can be handled in two ways. The acid is neutralized with an industrial compound similar to household baking soda. This turns the acid into water. The water is treated, cleaned and tested to be sure it meets clean water standards. Then it is released into the public sewer system. Another way to treat acid is to process it and convert it to sodium sulfate, an odorless white powder used in laundry detergent, glass, and textile manufacturing. This recycles a material that otherwise would have been discarded.

Lead-Acid Recycling Facts.

- The lead battery industry is the nation's largest user of lead, consuming 80 percent of the lead in this country.
- For 10 consecutive years, lead-acid batteries have topped the list of the most highly recycled consumer products with a 96.5 percent recycling rate in 1996.
- Every year, the battery industry reclaims 1.7 billion pounds of lead and about 1 billion pounds of plastic and returns both to the battery manufacturing process.
- When starting with a 40 pound battery, the material that's left over after recycling weighs just a few ounces – about as much as a car key. That's diverting a lot of material out of the waste stream and providing closed loop recycling by delivering the reclaimed lead and plastic back to battery manufacturing – an economic model that works very successfully.

The Heat Is On NI-CAD Batteries. One of the most important changes in nickel-cadmium battery recycling (of both consumer and industrial batteries) has been the installation of the cadmium recovery plant at the INMETCO facility in Ellwood City, Pa. The cadmium reclaimed from this new operation is returned to nickel-cadmium battery manufacturers. Recovered nickel and iron become part of a remelt alloy that is used to make stainless steel. Byproducts of the alloy process are sold for use in building roads, parking lots, and commercial driveways. Landfill liability is eliminated and natural resources are preserved.

Lithium Recovery. The cryogenic process described for recovering resources from lithium batteries was invented and is used by Toxco, Anaheim, Calif. In this process, liquid nitrogen is used. The contents of the batteries are exposed using a shredder for large and medium sizes or a high-speed hammer for smaller sizes. Afterwards, they are submerged in a large volume of caustic (basic, not acidic) water. The caustic solution neutralizes the electrolytes. The lithium goes into the solution. Ferrous and nonferrous metals (aluminum, tin, brass, copper, and steel) are recovered. The clean scrap metal then is sold to metal recyclers. Carbon is recovered and pressed into moist sheets of carbon cake. Some of the carbon is recycled with cobalt, and the remainder is land filled. The paper and plastic components are not recycled. The quantities are too small and of a mixed grade and consequently not useful to users of recycled paper and plastic.

The lithium in solution (lithium hydroxide) is converted to lithium carbonate, a fine white powder. What results is technical grade lithium carbonate. It is sold to several companies including those that make lithium ingot metal and foil for batteries and also provides lithium metal for resale and sulfur dioxide batteries.

The tremendous growth in the rechargeable lithium battery area has stimulated efforts to at least reclaim the most valuable components of lithium ion cells. Many lithium ion cells contain cobalt. Since cobalt is a relatively expensive material compared to the other battery constituents, its recovery is one of the primary objectives in the recycling processes.

The percentage of the batteries that are actually recycled ranges from approximately 65 percent for cell phones, camcorders, watches and hearing aid button cells to 90 percent for military purposes.

Nickel-Cadmium Recycling Facts. The RBRC operates a recycling program called Charge Up to Recycle! For Ni-Cd rechargeable batteries, RBRC enlists retail stores and communities nationwide to serve as collection sites for used Ni-Cd batteries. RBRC is committed to conserving natural resources and prevents Ni-Cd batteries from entering the solid waste stream.

It is now estimated that more than 75 million Ni-Cd batteries are sold annually in the U.S. alone. Only one in six households say they recycle rechargeable batteries. This is because most people don't know that used Ni-Cd batteries, which no longer hold a charge, can and should be recycled. Consequently, there are strong efforts to correct this though RBRC's international environmental initiatives, such as "Battery Check Day" and other educational campaigns.

Besides the cobalt, which is recovered as cobalt carbon cake, iron and other metals are also recycled from the used lithium ion cells. Recovered lithium salts and other lithium products are marketed for use in the lubricant, cement, and battery manufacturing industries.

Alkaline Battery Recycling. Recovered zinc is resold as zinc-oxide. The manganese dioxide becomes an alloy in the production of re-bar steel. Up to now, very few alkaline batteries have been recycled. However, because of the increasing concerns people have about our environment and pollutants, more alkaline batteries are being recycled, and their recycling rate is growing.

Some Batteries Excluded

Summary of article by DeAnne Toto, http://www.recyclingtoday.com/articles/article.asp?id=4716&issueid=171

Ever since Congress enacted the Mercury-Containing and Rechargeable Battery Management Act in 1996, the recycling of rechargeable batteries has increased. According to the RBRC, the Act streamlines state regulatory requirements for collecting rechargeable nickel-cadmium and lead batteries and encourages voluntary industry programs to recycle them. Rechargeable batteries enjoy an established collection and recycling infrastructure, thanks in part to this government regulation. Alkaline batteries, however, without the benefit of regulation, flounder when it comes to recycling, as no programs are dedicated to their collection and recycling. Alkaline batteries do trickle into battery collection programs and can be recycled, but not in significant numbers.

Success Story. "We've seen significant growth in terms of people recycling spent batteries," Ralph Millard, executive vice president of the RBRC says. Millard says the group's collection of recyclable batteries increased 12 percent in 2002 to roughly 3.4 million pounds of batteries. Millard adds, "We have 1,700-plus businesses that are participating and over 700 communities and another 700 public agencies." Those numbers represent an increase on the order of 20 percent from 2002's figures.

Chris Sova, president of Battery Solutions Inc. (BSI), Brighton, Mich., says that Americans are slowly getting into the habit of recycling their spent batteries. In the five cities where Battery Solutions has set up drop-off boxes to collect spent dry cell batteries, collection amounts have increased slowly but steadily over the last four years, Sova says.

Arrested Development. "There needs to be a greater capacity for recycling for alkaline-type batteries," Sova says. "If you collected all the alkaline batteries that were generated, there wouldn't be enough smelting capacity to recycle all those." Millard says that there are no real programs in place to collect primary, or alkaline, batteries, "with the exception of programs for hearing aid batteries, generally through retail collection." Steve Kinsbursky, president of battery operations for Toxco Inc., Anaheim, Calif., says the majority of batteries manufactured are alkaline. However, there are no regulations in force today that promote their recycling.

Driving Forces. Todd Coy, vice president of Kinsbursky Brothers Inc's battery division, says that two primary forces drive battery recycling, both of which do not apply to alkaline batteries: intrinsic value and legislation or

regulation. With lead acid batteries, Coy says, "You have an intrinsic value that promotes the recycling of that material. It's also promoted through legislation or recycling. With alkaline batteries, there really isn't any added value or intrinsic value to that material, generally speaking. If there is, the metals that are contained there are not sufficient enough to really drive an absolute recycling system. The only way that you would be able to drive that is through either an industry-sponsored collection activity or through some sort of a regulatory law to get those out of the waste stream into some sort of collection scheme."

While all household batteries are recyclable, the intrinsic value of the materials varies, and sometimes that value does not cover the cost of recycling. "For example, the alkaline battery is approximately 20 percent zinc," Kinsbursky says. He notes that in the case of a one-pound battery, if zinc can be sold for 50 cents per pound, the battery has an intrinsic value of just 10 cents in zinc metal. "By the time you go through the recycling process and the treatment process, you have to pay somebody in order to get it recycled," he comments.

Of the nearly 3 billion household batteries sold commercially each year, Kinsbursky says the majority are being thrown away rather than recycled. "And the problem with that was in the past, these batteries contained significant amounts of mercury." Coy says projections indicate that by 2008 nearly all of the mercury-added batteries will have passed through the waste stream.

"Still, people horde batteries [or] throw them into drawers," Kinsbursky says. "You never know when a battery will come out. There are still significant amounts [of mercury-added batteries] hitting the waste stream." People tend to throw away alkaline batteries because an effective or easy way to capture these batteries has yet to be established, Coy says. However, Toxco hopes to change that with the introduction of its Big Green Box program, which enables consumers to deposit batteries of all kinds, as well as portable electronic devices, in one location.

Effective Collections. Many battery recycling programs make use of retail collection centers, as they are convenient for consumers and relatively economical. "It makes a lot of sense for what we manage," Millard says concerning retail collection of rechargeable batteries. "I don't think it works for every type of product." The reason retail collections work for rechargeable batteries is because they are coming from consumer products at the retail level, Millard says. "We also think it works well for communities to be involved," he adds. Communities participate through curbside collections and drop-off locations."

Because of the growing concern associated with the cost of recycling at the municipal level, RBRC offers communities and public agencies free access to its rechargeable battery collection and recycling program, including container transportation, Millard says. RBRC transports the batteries using pre-paid collection containers that are shipped via UPS in the United States to INMETCO, Ellwood City, Pa., the company that processes the batteries. "It seems to me that point-of-sale collection is really the most logical step or direction to go in when you're trying to address consumers specifically," Coy says. "I think that point-of-sale collection is really the most efficient means to get the batteries out of the waste stream." Sova adds that convenience is key to increasing the recycling rate of household batteries. "Convenience is good at retail outlets, if you can get the companies to participate. The more places you have that you can drop the batteries, the better."

Millard adds that the workplace is becoming increasingly important as a collection point, thanks to the proliferation of cell phones, laptops, and two-way radios that are powered by rechargeable batteries. "We're finding it's an excellent opportunity for offices as well as manufacturing locations to put a collection box in place. It's worked very well."

Many of the companies BSI works with employ the company's Pail Mail program. Participating companies select a two-gallon or five-gallon collection and shipping container, holding approximately 25 pounds and 60 pounds respectively. Once full, the companies call BSI to arrange shipping via FedEx ground service. Once the batteries arrive at BSI's facility, the pails are emptied and returned to the participants.

Although the RBRC is experiencing success with its rechargeable battery collection and recycling program, the common household alkaline battery will continue to be discarded in the trash as long as financial or regulatory incentives do not exist. However, Europe may provide a successful example for recycling all household batteries, including alkaline. Coy explains, "It is a collection scheme that is really driven by the various European Union members. They require the collection of batteries, but they also require a standard, being that they want to reach a certain percentage of collection. They really drive that forward." Kinsbursky adds, "They help the collection scheme, and help recyclers with tipping fees and things of that nature. It seems that it's more important to them."

News You Can Use

How Does Your Commute Impact Global Warming? Find Out!

Excerpts of article from Commuter Weekly, September 16, 2003

Interested in figuring out how your travel decisions affect global warming? Then be sure to check out the Transit Cooperative Research Program's new website, which features an interactive emissions calculator that shows how individual travel patterns translate to greenhouse gas emissions.

Users enter the monthly distances traveled by mode of transportation—on foot, by bicycle, car, bus, train, plane, or boat—and the calculator automatically provides a personalized greenhouse gas accounting. The calculator also shows how many mature sugar maple trees it would take to remove the carbon emissions from the atmosphere over the course of a year.

The site also offers informative content for those who may want to learn more about the science behind climate change; the evolving local, national, and international policy response, or promising alternative fuels and technologies that might help reduce future emissions.

What else can you to do to help reduce emissions? Here are a few simple ways to reducing emissions through transportation use:

- Incorporate your exercise routine into your errand schedule by walking or biking to your next local destination. Forty percent of personal trips are of two miles or less.
- Increase your use of public transportation and ridesharing.
- By planning ahead, you can make one less trip to the grocery store per week or combine errands to decrease the amount of trips taken to errand locations.
- Make local trips with the more efficient vehicle.
- Maintain your vehicle over time. Most automobiles can improve their gas mileage by six percent with a minor tune-up. Properly inflated tires can also improve overall fuel efficiency.
- Become involved in community efforts to make your neighborhood more bike and pedestrian friendly.

For the complete article, visit *www.vre.org/service/commuterweekly/globalwarming.htm*.

OSHA Rolls Out New Chemical Safety and Health Information Site

WASHINGTON, DC – The U.S. Occupational Safety and Health Administration (OSHA) has unveiled a new chemical safety and health information web page. The site features information on the recognition, evaluation, and control of chemical reactive hazards and includes compliance requirements and available training resources. Visitors to the new web page can access OSHA standards and fact sheets on process safety management as well as additional reactive material hazard information from the center. Other features include:

- Links to a chemical reactivity worksheet provided by the National Oceanographic and Atmospheric Administration's Office of Response and Restoration with information on more than 6,000 common hazardous chemicals,
- Free access to a new book by the Center for Chemical Process Safety that includes best practices from leaders in chemical processing, and
- Reports on various reactive chemical incidents and resulting investigative reports, as well as references to other sources of information on chemical safety.

"I believe our comprehensive approach to address hazards posed by reactive chemicals is a sound one," said OSHA Administrator John Henshaw. "This new web page is an important part of a well rounded strategy that will result in fewer reactive chemical incidents and fewer worker injuries and deaths." The new web page can be found at: *www.osha.gov/dep/reactivechemicals*.

Awards

Rear Admiral William M. Benkert Marine Environmental Award for Excellence

The U.S. Coast Guard is soliciting for applications for the biennial Rear Admiral William M. Benkert Marine Environmental Protection Award for Excellence. The program recognizes corporations and businesses involved in marine facility or vessel operations that have demonstrated sustained excellence and outstanding achievement in protecting the marine environment.

Applications are requested by February 15, 2004. Log onto the award website at *www.uscg.mil/hq/g-m/mor/mor-1/benkert_award/overview.htm* to receive information on the application process. If you have any questions, comments, or concerns, please contact the program coordinator LT Alexis Tune at (202) 267-0426 or via e-mail: *Atune@comdt.uscg.mil*.

The 2002 Benkert Award presentations were held during the American Petroleum Institute's (API's) 2003 Tanker Conference in La Jolla, CA on June 24th. We are pleased to announce the 2004 award presentations will once again be presented during the API's 2004 Tanker Conference at the Rancho Bernardo Inn in San Diego, CA from June 28-29.

2002 Award Recipients

Gold: Sea River Maritime, Houston, TX

Silver: Marathon Ashland Petroleum, LLC, Russell, KY

Bronze: Totem Ocean Trailer Express, Inc., Seattle, WA
Maritrans Operation Company LP, Philadelphia, PA
Canal Barge Company, New Orleans, LA
Celebrity Cruises Inc., Miami, FL

Special Small Business: M/G Transport; Paducah, KY
Southeast Alaska Petroleum Resource Organization; Ketchikan, AK

Environmental Extras

Fond Farewell

By Kate Lemanski, Student Intern at G-SEC-3

I have spent the past four months of my college career as an intern for the Environmental Management Division (G-SEC-3) at U.S. Coast Guard Headquarters. I am a senior from Indiana University (IU) with a legal studies major within the School of Public and Environmental Affairs. I grew up in Kalamazoo, Michigan, but have not since lived in one place for long. I traveled to South Africa in January 2002 for an International Mission on Law and spent the spring semester of my junior year studying abroad in Melbourne, Australia.

I came across the internship through a program at IU called the Washington Leadership Program whereby 30 students are selected each semester to live in the area, intern at an agency, and take two classes from an IU professor sent to the area with us. My time at G-SEC-3 has been a great learning experience that will undoubtedly benefit my future career path. Knowing very little about military protocol, I was initially unsure what I was going to encounter during my internship. Now, upon my departure, I realize the breadth of topics facing the Coast Guard. I have also witnessed the dedication and perseverance required to surmount these diverse tasks.

In the near future, I plan to return IU for a final semester, graduating in May. With fingers crossed, upon graduation I hope to work for a year or two in a law firm. Ultimately, I will be heading to law school to specialize in environmental law. My time here has been most rewarding and I am grateful for the invaluable insight I was able to gain from my short time here.

Lead-Based Activities

ALCOAST: Prohibition of Hobbies Involving Lead in Coast Guard Owned or Leased Housing

R 012102Z AUG 03 ZUI ASN-A00213000249
FM COMDT COGARD WASHINGTON DC//G-WP//
TO ALCOAST
BT
UCLAS //N06260//
ALCOAST 360/03
COMDTNOTE 6260
SUBJ: PROHIBITION OF HOBBIES INVOLVING THE MELTING, MACHINING, SOLDERING, AND BUFFING OF LEAD IN COAST GUARD OWNED OR LEASED HOUSING

1. THE MELTING, CASTING, MACHINING, SOLDERING, AND BUFFERING OF LEAD IN COAST GUARD OWNED OR LEASED HOUSING IN PROHIBITED.

2. LEAD POISONING IS THE MOST PREVENTABLE ENVIRONMENTAL HEALTH HAZARD FACING YOUNG AND UNBORN CHILDREN NATIONWIDE. POISONING OCCURS WHEN LEAD IS SWALLOWED OR BY BREATHING LEAD DUST. EVEN SMALL QUANTITIES OF LEAD CAN BE DANGEROUS. YOUNG CHILDREN ARE MOST SUSCEPTIBLE BECAUSE THEIR NERVOUS SYSTEM, THE TARGET ORGAN FOR THE DAMAGING EFFECTS OF LEAD, IS STILL DEVELOPING RAPIDLY. DAMAGE TO YOUNG CHILDREN, IF IT OCCURS, MAY BE PERMANENT. SYMPTOMS OF LEAD POISONING INCLUDE: DAMAGE TO THE NERVOUS SYSTEM, LEARNING DISABILITIES, BEHAVIOR PROBLEMS, LOSS OF HEARING, MENTAL RETARDATION.

3. OVER THE PAST SIX YEARS, THE COAST GUARD HAS MADE SIGNIFICANT PROGRESS IN REDUCING OR ELIMINATING LEAD HAZARDS IN COAST GUARD OWNED HOUSING. THESE EFFORTS HAVE RESULTED IN SIGNIFICANT IMPROVEMENT IN LIVING CONDITIONS OF COAST GUARD MEMBERS AND THEIR FAMILIES. IT HAS RECENTLY COME TO LIGHT, HOWEVER, THAT SOME COAST GUARD MEMBERS IN OWNED OR LEASED HOUSING MAY BE PERFORMING HOBBIES THAT COULD CONTAMINATE THEIR HOMES WITH LEAD.

4. HOBBIES PRESENTING THE MOST SIGNIFICANT POTENTIAL FOR INTRODUCING LEAD CONTAMINATION INTO THE HOME ENVIRONMENT INCLUDE ACTIVITIES SUCH AS CASTING BULLETS AND FISHING WEIGHTS, CREATING LEAD TOYS OR FIGURINES, AND MAKING STAINED GLASS. REINTRODUCTION OF LEAD RESULTING FROM HOBBIES OF HOUSING OCCUPANTS IS BOTH HARD TO REGULATE AND EXPENSIVE TO CLEAN UP. HOBBIES THAT USE LEAD POSE A HAZARD NOT ONLY TO CURRENT BUT ALSO FUTURE OCCUPANTS, EXPOSE THE COMMAND TO STATE OR FEDERAL CITATION, ARE DIFFICULT TO MONITOR OR REGULATE, AND EXPENSIVE TO CLEAN UP.

5. THE POTENTIAL FOR SIGNIFICANTLY CONTAMINATING A HOME WITH LEAD IS BEST EXEMPLIFIED BY THE COAST GUARD MEMBER WHO MELTED, CAST, AND SHAPED LEAD FOR BALLAST IN DINGHIES HE CRAFTED. THE RESULTING CONTAMINATION WAS FOUND NOT ONLY IN HIS EXTERIOR WORK SHED, BUT ALSO IN HIS COAST GUARD OWNED HOME. LEAD CONTAMINATION WAS HIGH ENOUGH TO REQUIRE NOTIFICATION OF THE STATE. STATE GUIDELINES FOR CONTAMINATION AT THIS LEVEL NECESSITATED THE HOME BE DECLARED A HAZARDOUS WASTE SITE REQUIRING CLEANUP, AN EFFORT COSTING THE COAST GUARD SEVENTY-SEVEN THOUSAND DOLLARS.

6. INTERNET RELEASE AUTHORIZED.

7. MR. THOMAS F. FISHER, ACTING DIRECTOR OF PERSONNEL MANAGEMENT, SENDS.

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Sources for Lead-Based Activities

Some cities and states have their own rules for lead-based paint activities, including clean-up standards. It is a good idea to check with your state agency to see if state or local laws apply to you. Below are phone contacts for each state and EPA office that will provide you with further information on groundwater and soil contamination.

STATE HEALTH AND ENVIRONMENTAL AGENCIES

Alabama (205) 242-5661
Alaska (907) 465-5152
Arkansas (501) 661-2534
Arizona (602) 542-7307
California (510) 450-2424
Colorado (303) 692-3012
Connecticut (203) 566-5808
Washington, DC (202) 727-9850
Delaware (302) 739-4735
Florida (904) 488-3385
Georgia (404) 657-6514
Hawaii (808) 832-5860
Idaho (208) 332-5544
Illinois (800) 545-2200
Indiana (317) 382-6662
Iowa (800) 972-2026
Kansas (913) 296-0189
Kentucky (502) 564-2154
Louisiana (504) 765-0219
Massachusetts (800) 532-9571
Maryland (410) 631-3859
Maine (207) 287-4311
Michigan (517) 335-8885
Minnesota (612) 627-5498
Mississippi (601) 960-7463
Missouri (314) 526-4911
Montana (406) 444-3671
Nebraska (402) 471-2451
Nevada (702) 687-6615
New Hampshire (603) 271-4507
New Jersey (609) 633-2043
New Mexico (505) 841-8024
New York (800) 458-1158
North Carolina (919) 715-3293
North Dakota (701) 328-5188
Ohio (614) 466-1450
Oklahoma (405) 271-5220
Oregon (503) 248-5240
Pennsylvania (717) 782-2884
Rhode Island (401) 277-3424
South Carolina (803) 935-7945
South Dakota (605) 773-3153
Tennessee (615) 741-5683
Texas (512) 834-6600
Utah (801) 536-4000
Vermont (802) 863-7231
Virginia (800) 523-4019
Washington (206) 753-2556
West Virginia (304) 558-2981
Wisconsin (608) 266-5885
Wyoming (307) 777-7391

In addition to this list of state agencies, the Association for Environmental Health and Sciences publishes a list of state cleanup standards on its website, *www.aehs.com/surveys.htm*. Individual state cleanup standards are published yearly. Using the map available on their web page, cleanup standards are available for the years 1998-2001.

EPA REGIONAL OFFICES

Your Regional EPA Office can provide further information regarding regulations and lead protection programs.

Region 1
(617) 565-3420

Region 2
(908) 321-6671

Region 3
(215) 597-9800

Region 4
(404) 562-8956

Region 5
(312) 886-6003

Region 6
(214) 665-7244

Region 7
(913) 551-7020

Region 8
(303) 293-1603

Region 9
(415) 744-1124

Region 10
(206) 553-1200

CPSC REGIONAL OFFICES

Eastern Regional Center
(212) 466-1612

Central Regional Center
(312) 353-8260

Western Regional Center
(415) 744-2966

Federal Register Notices

New Rules Proposed for Solvent-Contaminated Industrial Wipes

Proposed Rule - November 20, 2003
Title: Solvent-Contaminated Industrial Wipes Hazardous Waste Management System: Identification and Listing of Hazardous Waste: Conditional Exclusions from Hazardous Waste and Solid Waste for Solvent-Contaminated Industrial Wipes

EPA is proposing to modify its hazardous waste management regulations under the Resource Conservation and Recovery Act for certain solvent-contaminated materials, such as reusable shop towels, rags, disposable wipes, and paper towels. Specifically, EPA is proposing to conditionally exclude from the definition of hazardous waste disposable industrial wipes that are contaminated with hazardous solvents and are going to disposal; and to conditionally exclude from the definition of solid waste reusable industrial shop towels and rags that are contaminated with hazardous solvents and are sent for laundering or dry cleaning (hereinafter referred to as disposable industrial wipes and reusable industrial wipes, respectively). This proposal affects contaminated industrial wipes being sent to both landfill and non-landfill (e.g., laundries and combustion) facilities and is applicable to industrial wipes exhibiting a hazardous characteristic (i.e., ignitability, corrosivity, reactivity, or toxicity) due to use with solvents; or industrial wipes contaminated with F001-F005 spent F-listed solvents or comparable P- and U-listed commercial chemical products that are spilled and cleaned up with industrial wipes.

This proposal would resolve, at the federal level, long-standing issues associated with the management of solvent-contaminated industrial wipes by:

- Facilitating pollution prevention and waste minimization opportunities, including the recycling of the spent solvents extracted from contaminated industrial wipes;
- Fostering improved solvents management by generators and handling facilities;
- Reducing compliance costs;
- Increasing consistency in the regulations governing solvent-contaminated industrial wipes across the United States;
- Clarifying existing federal rules; and
- Creating flexibility for generators to work with industrial laundries, as appropriate, to ensure compliance with local pretreatment standards established by Publicly Owned Treatment Works (POTWs).

Additionally, the proposal contains the Agency's proposed response to rulemaking petitions filed by the Kimberly-Clark Corporation and the Scott Paper Company.

Background information for this notice is available through EPA's electronic public docket and comment system, EPA Dockets, at *www.epa.gov/edocket*. The docket number is RCRA-2003-0004 (*http://cascade.epa.gov/RightSite/dk_public_collection_detail.htm?ObjectType=dk_docket_collection&cid=RCRA-2003-0004&ShowList=items&Action=view*).

The Federal Register notice is available at *http://www.epa.gov/epaoswer/hazwaste/id/solvents/wipes-fr.pdf* (255KB, Adobe PDF File) or at the EPA website at *http://www.epa.gov/fedrgstr/EPA-WASTE/2003/November/Day-20/f28652.htm*.

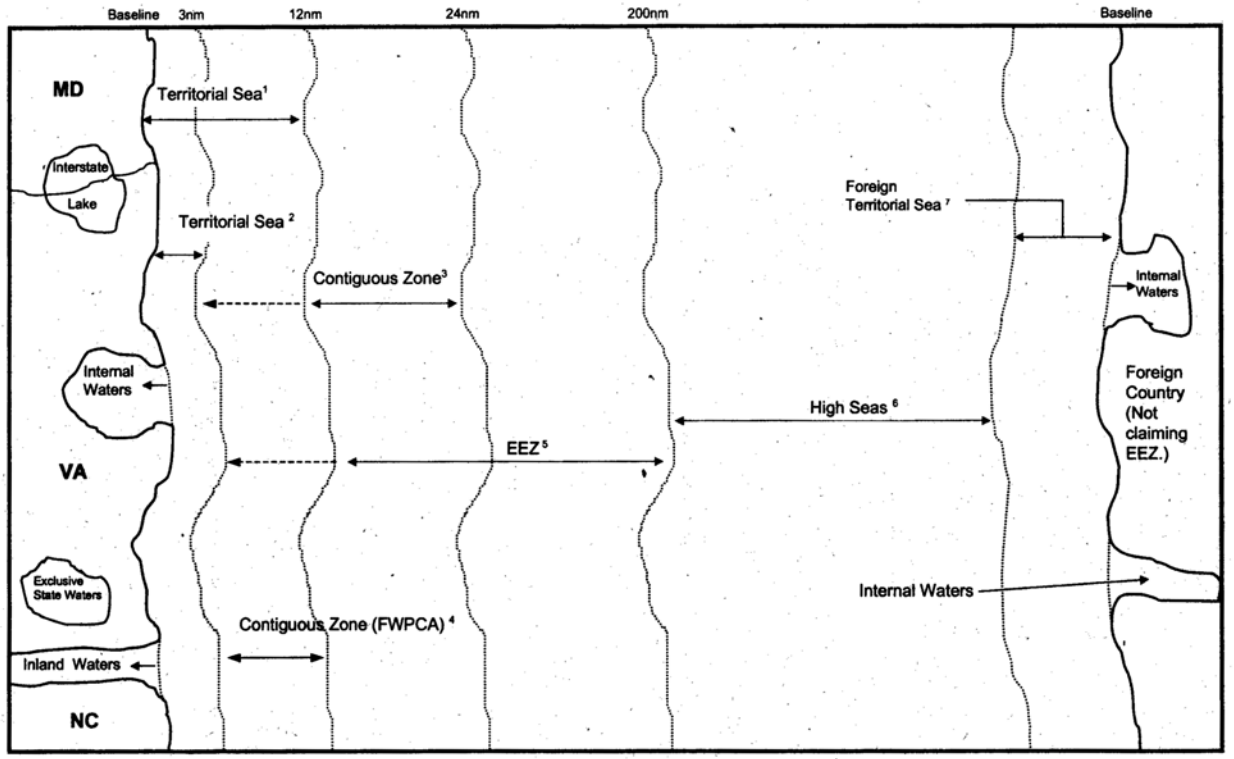
An EPA fact sheet on this topic is available at *http://www.epa.gov/epaoswer/hazwaste/id/solvents/wipes-fs.pdf* (15KB, Adobe PDF File).

Revisions to 33 CFR Part 2 — Jurisdiction

Part 2 of Title 33 has been revised, as published in the Federal Register dated July 18, 2003. This part defines terms the Coast Guard uses in regulations, policies, and procedures to determine where it has jurisdiction on certain waters in cases where specific jurisdictional definitions are not otherwise provided. Figure 2.1 from the Federal Register notice, which serves as a visual aid in defining terms, has been included for easy reference. See Subpart B of 33 CFR 2 for a list of these jurisdictional terms.

Subpart C of 33 CFR 2 describes the maintenance of jurisdictional decisions. These decisions are subject to change or modification. Inquiries concerning whether a determination has been made for specific waters, for the purposes of Coast Guard jurisdiction, should be directed to the District Commander of the district in which the waters are located.

Coast Guard Jurisdictional Areas (Figure 2.1)



[1] Territorial sea for purposes identified in §2.22(a)(1).

[2] Territorial sea for purposes identified in §2.22(a)(2).

[3] Contiguous zone as described in §2.28(b), varies with territorial sea width for particular purpose involved.

[4] Contiguous zone as described in §2.28(a), for Federal Water Pollution Control Act purposes.

[5] Exclusive Economic Zone (EEZ) is measured from the seaward limit of the territorial sea, as variously defined in §2.22(a), to a distance of 200 nautical miles from the baseline. The inner (shoreward) boundary of the EEZ will vary for particular purposes.

[6] High seas as defined in §2.32(d). When a nation has not proclaimed an EEZ, the high seas begin at the seaward edge of their territorial sea.

[7] The U.S. recognizes territorial sea claims of other nations up to a maximum distance of 12 nautical miles from the baseline.

Homeland Security

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In support of our environmental mission and goals for a paperless office, if you are currently receiving a paper copy of the publication and are capable of receiving it electronically, please notify Martin Nguyen.

The Environmental Times is a quarterly publication designed to keep Coast Guard personnel apprised of environmental issues impacting Coast Guard facilities, operations, planning, and policy making. We encourage you to share your stories and successes as environmental stewards.